DOCUMENT RESUME

ED 201 603 SP 017 722

AUTHOR Burns, David
TITLE The Evaluation of Student Teaching Practice--An Occupational Analysis Approach.
PUB DATE Feb 80
NOTE 19p.; Paper presented at the National Conference on The Practicum in Teacher Education (2nd, Armidale, New South Wales, Australia, February 4-8, 1981). Not available in hard copy due to marginal legibility of original document.

EDRS PRICE MF01 Plus Postage. PC Not Available from EDRS.
DESCRIPTORS Beginning Teachers; Curriculum Development; Higher Education; *Job Analysis; Program Evaluation; *Student Teachers; Student Teaching; *Task Analysis; Teacher Education Curriculum; Teacher Education Programs; Teacher Effectiveness; Teacher Evaluation; *Teaching Skills

ABSTRACT

This paper discusses the use of occupational analysis techniques to describe and evaluate student teacher practice. Occupational analysis provides a proven procedure for improving the match between jobs and training programs. Teaching reports were analyzed to identify the criteria used by supervisors to assess the quality of student teaching. A list of teaching tasks was produced showing the average amount of time spent on each task, and ratings of the time spent, criticality, and complexity of task were used to develop a training priority index. The index was used to create an optimum training sequence for evaluating and designing the teaching practice program. The results were a rearrangement of topics in the instructional units and the introduction of new teaching materials to match the teaching tasks. (JD)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

Paper prepared for the

SECOND NATIONAL CONFERENCE

on

THE PRACTICUM IN TEACHER EDUCATION

held at
ARMIDALE COLLEGE OF ADVANCED EDUCATION
ARMIDALE, N.S.W.

4th – 8th February, 1980

THE EVALUATION OF STUDENT TEACHING PRACTICE

– AN OCCUPATIONAL ANALYSIS APPROACH

DAVID BURNS
Burwood State College
221 Burwood Highway,
Burwood. 3125
285-0444

SP 017 722

EVALUATION OF STUDENT TEACHING PRACTICE - AN OCCUPATIONAL ANALYSIS APPROACH

David Burns
Burwood State College

SYNOPSIS

This paper discusses the use of occupational analysis techniques to describe and evaluate student teaching practice. Occupational analysis provides a proven procedure for improving the match between job and training programme. In the first study of the Occupational Analysis of Teaching (Burns 1978), teaching reports were analysed to identify the criteria used by supervisors of teaching to assess the quality of student teaching. From this analysis, nineteen criteria of effective student teaching were identified and a diagnostic teaching report form was developed.

In the second study, job inventory, a list of teaching tasks, was created to describe the work of beginning teachers. After analysis with the occupational analysis computer programmes, (CODAP), a job description of the work of beginning teachers was produced showing the average per cent time spent on each teaching task. Ratings of the tasks on two factors, criticality and complexity, were computed. Mean ratings of the three factors, time spent, criticality and complexity, were used to develop a training priority index. With this index, the teaching tasks from the inventory were arranged in training priority order. The new sequence of teaching tasks was used to re-design and evaluate the teacher training programme. New self-instructional materials were designed for the training programme based on the sequence.

In both studies, the analysis of the data led to a closer match between the job description and the job training.

OCCUPATIONAL ANALYSIS AND TEACHER TRAINING

The main significance of occupational analysis for teacher training is that it offers a variety of analyses which describe the extent and nature of the match between teacher training and the job of teaching. Through job analysis of the work of the beginning teacher, the most time consuming, critical and manageable tasks were identified and incorporated in the initial training programme. A different range and sequence of teaching tasks can be identified, describing the work of the experienced teacher, and be incorporated in matching in-service programs. Teaching tasks which are best learned on the job, can be identified and incorporated in on-the-job training programmes. With accurate job specifications of teaching in different areas and at different levels, the job relevance of teacher training programmes can be demonstrated and maintained.

DESCRIPTION AND EXPLANATION OF OCCUPATIONAL ANALYSIS METHODOLOGY

The term 'occupational analysis' covers a range of activities including, job analysis, job evaluation and programme evaluation.

Job Analysis

Job analysis is a systematic method of analysing training and job data in order to provide policy makers and trainers with an empirical basis for writing job specifications and designing job training programmes. The analyst creates a job description, which is an ordered listing of tasks actually performed by workers in that job. The order in the job description is based on the per cent of work time spent on each task. The respondents are clustered into groups according to the similarity of their ratings of the task.

Programme Evaluation

In one of the techniques of programme evaluation the analyst compares the detailed tasks in the job

description with a similar list in the training programme. It is possible to identify those tasks which form a time consuming part of the experienced teachers work time and check whether they appear in the training programme. The precision of the job description provides a basis for making informed decisions about the selection and sequencing of tasks for a training programme.

Job Evaluation

Job evaluation, the process of assessing different jobs to ascertain their relative values, can be conducted in a more informed manner when based on job descriptions which list tasks actually performed and the relative per cent of work time spent on each. The nature of the work performed by teachers in different positions can be accurately outlined. The proposed national survey to assess the responsibilities of heads of departments in C.A.E.s would benefit from this approach.

DATA GATHERING

Description Of The Job Inventory

The main data gathering device in occupational analysis is the job inventory. The inventory is a survey document which contains two main sections. Section I contains items to elicit background infirmation, such as qualifications, experience, attitudes to the job and its problems. Section II contains a structured list of duties and tasks performed by all members of the group being surveyed. e.g. primary teachers. The background section of the job inventory can cover as wide a range of items as the survey designer requires. The list of duties and tasks can be compiled from a variety of sources, including a review of the literature, interviews, job observations, and from responses to the pilot form of the inventory. The job incumbent, the person responding to the survey, completes the task inventory in two stages. In the first reading he is asked to put a tick beside all the tasks which he performs in his present position. He is asked not to tick tasks which he performed in previous years. When he reads the task inventory the second time, the respondent rates each task on a 1 to 9 scale to indicate his estimate of the time he spends on each task.

Reasons For Using Job Inventories

Christal (1974), who developed the U.S. Air Force Occupational Analysis Project over a twenty year period, lists the following reasons for using a job inventory to collect work-task information.

1. The inventories are large and detailed, leading to greater accuracy in job description.
2. This is an economical way of surveying large numbers of members of an occupation. The U.S. Air Force, for example, attempts to use 100% samples when surveying occupations with less than 2000 workers.
3. The task lists are accepted by the people on the job, and those supervising it, as valid sources for accurate job descriptions.
4. The information can be quantified.
5. Since the information collected is quantified it can be stored, manipulated, analysed and reported by computer.
6. Quantifiable information can also be validated and checked for stability using conventional statistical analysis.
7. Comparative data has been collected over twenty years.
8. Longitudinal studies can be conducted to monitor changes in the nature of the work performed, before and after training. For example, it would be possible to monitor very accurately changes in the range of teaching tasks performed by individuals or groups at different stages of the training program, and in subsequent years of teaching experience.

'Relative Time Spent' Ratings

Occupational analysts use the respondent's time spent ratings to create a detailed description of his job in two ways.

1. All the tasks he performs are listed and are assumed to occupy 100% of his work time.

2. The fraction of his work time spent on each task is computed and listed as a percentage.

Christal (1974) lists several factors which support the value of using 'per cent time-spent values'. First, there is a clearly defined range from 1 to 100% of the respondent's work time. Similarly, the 'average values' for any group indicate the percentage of group time spent on each task. The sum of these mean values is also 100%.

> Percent time values provide a convenient method of computing the overlap of two individual jobs with each other, of an individual job with a group job description, or of one group job description with another group job description. (p.7)

Secondly, knowing the per cent time spent on each task, the researcher can calculate the time spent on particular types of work. This information is invaluable for the designer of pre-service and in-service courses. If it is found that certain tasks are not performed until a teacher has been working three or four years, or until he holds a higher position in the hierarchy, it may be more appropriate to incorporate this task in an in-service programme than in a pre-service course.

Task Factor Data

The researcher needs to know more about each task than the relative amount of time spent on it. He may wish to know if the task is difficult to learn or if it is important. These and other characteristics can be defined and measured by using the job inventory. These characteristics are called Task Factors in the occupational analysis literature.

Task factors can be measured by using another version of the same job inventory. For example one task factor which appears in many inventories is 'criticality'. Criticality is defined for the respondents by posing the question, 'What are the consequences of inadequate performance of the task?'. Respondents rate the criticality of the task on a nine point scale, from negligible to serious. Another task factor, task difficulty, is rated according to the amount of time needed to learn to perform the task satisfactorily.

Task factor ratings are usually made by job supervisors. For example, if the researcher wished to measure the difficulty of tasks in an Inventory of Teaching Tasks, the appropriate groups to ask would be those close to the workface, such as co-ordinators, senior teachers, principals, inspectors and supervisors of teaching.

Task factor ratings provide very useful additional information for the designer of the training programme. It is useful to know that a specific task is very rarely performed, that teachers spend a small percentage of their time on it, that it takes a very long time to learn to perform it properly, and that it does not matter much if it is not performed adequately. Conversely it is important to know that a task is performed by most teachers, that it is one of their most time consuming tasks, that it can be mastered very quickly, and that inadequate performance leads to serious consequences.

Background Information

A wide range of background information can be collected in the first part of the inventory. The information can include, present and desired qualifications, the range of experiences in the profession and the respondent's perceptions of job satisfaction, job difficulty, job interest, use being made of training and satisfaction with training.

The occupational analysis computer programs cluster the respondents into groups according to the similarity of the responses to the time spent factor. Each respondent is listed on a printout in KPATH order, that is in order of similarity. See Figure 1. Respondents 1 and 2 are listed side by side because they have the most similar set of responses to the task inventory. The last respondent on the KPATH list has the set of responses which is least similar to that of respondent No. 1. All or selected items of background information are shown on this printout, so that a sub-group of respondents may be checked to see if they have a number of common background features as well. For example, all 25 members of a sub-group may be the only junior primary teachers in the sample of 300.

The background information in these profiles provides additional objective information to enable programme designers and evaluators to make informed decisions and monitor the results of previous decisions.

FIGURE 1

All Background Variables PRTVAR Page 1

PRINTED VARIABLES REPORT - STUDY C044BITT - BURWOOD INVENTORY OF TEACHING TASKS

KPATH NO	CASE NO	TEACHING EXPERIENCE	SEX	MARITAL STATUS	QUALIFI-CATIONS	PRESENT POSITION	PAST AGES TAUGHT	PRESENT AGES TAUGHT	PREFERRED STYLE MOST	PREFERRED STYLE LEAST	NON ZERO RESONSES
1	0001	2	1	1	1	3	0	0	5	10	110
2	0002	5	1	1	3	1	0	0	8	2	125
3	0024	2	2	1	1	1	0	0	4	6	125
4	0074	3	2	1	2	1	0	0	0	1	129
5	0076	5	2	2	2	1	0	0	3	1	126
6	0003	3	2	1	2	1	0	0	10	8	130
7	0011	5	1	1	1	3	0	0	2	9	132
8	0005	5	1	1	3	1	0	0	5	1	135
9	0019	5	2	2	3	1	0	0	4	10	136
10	0063	3	1	1	3	1	0	0	3	10	136
11	0081	2	2	2	1	1	0	0	3	9	135
12	0027	1	2	2	2	2	0	0	4	9	135
13	0067	1	2	2	2	2	0	0	4	2	136
14	0106	1	2	2	2	2	0	0	4	6	136
15	0101	1	2	2	2	2	0	0	4	6	136
16	0094	1	2	2	4	2	0	0	0	1	133
17	0100	5	2	2	2	1	0	0	5	9	135
18	0107	1	1	2	2	2	0	0	10	1	136
19	0111	5	1	1	3	1	0	0	5	6	136
20	0064	5	2	2	1	1	0	0	4	7	136
21	0129	3	1	1	3	3	0	0	1	10	134
22	0138	1	2	2	2	2	0	0	5	1	135
23	0090	1	1	2	2	2	0	0	5	6	132
24	0045	5	1	1	3	1	0	0	3	1	136
25	0096	1	2	2	2	2	0	0	5	9	136
26	0050	1	2	2	4	2	0	0	3	6	136
27	0092	1	2	2	2	2	0	0	3	1	136
28	0052	1	2	1	2	1	0	0	3	6	134
29	0120	5	1	1	3	1	0	0	5	7	133
30	0058	3	2	1	2	1	0	0	0	6	128

QUALITY OF JOB INVENTORY DATA

The quality of job inventory data is central to occupational analysis methodology. Christal (1974) and Thompson (1979) reviewed findings from occupational research on the validity and reliability of job inventory and task factor information. They report that respondents are thorough and honest when completing job inventories in the U.S. Air Force.

> When a worker fills out an inventory on two occasions, he gives essentially the same information both times. Split-half reliabilities for information such as the per cent of workers performing various tasks run from .95 to .99. Supervisors agree with the information provided by their subordinates. Information collected with daily work records is consistent with information collected with inventories. Workers do not inflate their job descriptions in terms of the number and difficulty levels of tasks they report. (p. 6)

Christal (1974) comments on the validity of the per cent time spent data,

> Many workers do not have a clear idea of the exact percentage of their time they devote to each task they perform. But they can state with confidence that they spend more time on one task than another.

and,

> Per cent time spent among individual job descriptions when clustered by the (occupational analysis) grouping program yields a precise definition of types of jobs existing in a mustering or occupational area.

Finally Christal (1974) describes a case when the accuracy of the job inventory data was verified.

> The U.S. Air Force Occupational Research Project has published analysis results on 200,000 cases in 150 occupational areas, and these results have never been proven wrong by managers, workers, or trainers in these occupational areas. There have been occasions when we were worried. In one instance, we found that very few workers were performing a large set of tasks which constituted approximately 25% of a training course. The managers were so unbelieving that they did an independent survey, interviewing every worker in the occupational area to see if, in fact, he performed any of the tasks in question. The results of this interview-survey were, for all practical purposes, identical with those obtained from inventory administration. (p. 7)

DATA ANALYSIS

Description Of The CODAP Analysis System

The CODAP system (COMPREHENSIVE OCCUPATIONAL DATA ANALYSIS PROGRAM), consisting of over 60 computer programmes, is designed to process occupational information in order to answer a wide range of questions posed by policy makers and curriculum planners.

Time Spent Reports

Some 'Time Spent' programmes are used to cluster respondents into groups according to the similarity of their ratings of the tasks in the inventory. Others are used to create detailed job descriptions of sub-groups identified within the total group being surveyed. Another printout compares the precise differences between the task descriptions of selected pairs of job groups.

Task Factor Reports

Task Factor programmes are used to analyse the rating given by respondents to tasks according to selected factors. In the Occupational Analysis of Teaching project, two factors criticality and complexity, were selected. Printouts were produced which arranged the teaching tasks in selected order. For example, one printout arranged the tasks in descending order according to their mean criticality rating.

JOB ANALYSIS OF TEACHING

In the Occupational Analysis of Teaching Project, two job analysis instruments, the Criteria of Effective Student Teaching and the Inventory of Teaching Tasks, were used to create job descriptions of teaching.

DEVELOPMENT OF THE 'CRITERIA OF EFFECTIVE STUDENT TEACHING'

The purpose of the Criteria of Effective Student Teaching study was to identify the criteria most commonly used by supervisors when assessing teaching practice. The criteria were developed from an analysis of the teaching reports made on a group of primary student teachers over the three years of their training. Nineteen criteria were eventually identified and ranked according to frequency of use. The criteria which were used the greatest number of times by both college and school supervisors pf teaching practice were (1) Preparation and Planning and (2) Control. These two criteria accounted for 30% of the total number of times that the 19 criteria were used in all the reports. Criterion No. 18, 'Effective Pupil Learning', accounted for barely 1% of the total number of mentions of all criteria. The nineteen criteria are shown in Figure 2.

FIGURE 2

CRITERIA OF EFFECTIVE STUDENT TEACHING (C.E.S.T.)

	CRITERION	DEFINITION
1.	Planning and Preparation	Planning shows clear thought, knows exactly what he intends. Well prepared. Has tapped sources other than the text.
2.	Articulateness	Uses a varied vocabulary easily and fluently. Speaks with pleasing clarity.
3.	Rapport	Quickly establishes responsive relationships with pupils. Maximises individual involvement.
4.	Control	Takes problems of bad pupil behaviour in his stride. Manages class effectively. Supervises pupils' work. Handles varied sized groups and lesson transitions well.
5.	Adopts Professional Role	Acts as a member of the school staff in the classroom and other school areas. Co-operates with school staff.
6.	Relaxed Manner	Relaxed and at ease in the classroom.
7.	Warmth	Shows warm, outgoing, friendly, personality. Sense of humour.
8.	Flexibility	Successfully adapts presentation of level of pupils' understanding. Seizes emerging teaching opportunities. Varies pace.
9.	Originality	Shows originality and variety of procedures.
10.	Responsive and Self Critical	Responds to advice. Is able to identify strengths and weaknesses in teaching and shows continuous improvement.
11.	Use of Audio Visual Aids	Uses visual aids (including chalkboard) to good effect where necessary.
12.	Maturity	Shows mature attitude to his responsibilities.
13.	Motivation	Is able to arouse and sustain the interest of the children.
14.	Pupil Activity	Work is set to enhance the pupils' knowledge and are an integral part of the teaching activity.
15.	Questioning Skills	Questions pupils appropriately. Phrases questions well.
16.	Knowledgeable	Shows a thorough knowledge of his subject.
17.	Clinching	Brings a lesson or activity to a satisfactory conclusion.
18.	Effective Pupil Learning	Pupils' learning meets the teachers objectives.
19.	Discussion	Can arouse and sustain relevant discussion.

BURWOOD STATE COLLEGE
DEPARTMENT OF
APPLIED EDUCATION
DIAGNOSTIC TEACHING REPORT

DATE _____

STUDENT'S NAME

SCHOOL

LEVEL

OBSERVER'S NAME

Please place a tick in the appropriate box across the teaching level of performance.

The full range of levels should be used. The student's ability in a particular skill should be judged by the standard appropriate for a student teacher at the stage of the course.

On many occasions it will not be possible to observe certain behaviour and the category NOT OBSERVED should be used. We are trying to give students feedback about specific practices regarding their performance in the classroom. It is hoped that this form will help them, school principals, classroom teachers and college staff to identify strengths and weaknesses and ensure that effective help can be given where needed. Comments should be discussed with the person concerned.

We suggest that teachers and lecturers use this record when observing and discussing teaching sessions. The schedule can be used by the student as a check list before and after teaching to guide self-evaluation. It may also be used by the classroom teacher over the whole teaching round, to list the kinds of evidence which he is using to support his judgements. The college adviser will find it useful in a similar way.

	CATEGORY	EVIDENCE – COMMENT TO SUPPORT THE ASSESSMENT	LEVEL OF PERFORMANCE: NOT OBSERVED	OUTSTANDING	VERY GOOD	GOOD	ADEQUATE	NEEDS ATTENTION	POOR
AIMS	CLARITY OF AIMS – *the purposes of the lesson are clear*								
AIMS	APPROPRIATE OBJECTIVES – *suitably expressed*								
PLANNING & PREPARATION	EFFECTIVE FORWARD PLANNING – *research is adequate – teaching notes are prepared – resources are listed – accurate information is available*								
PLANNING & PREPARATION	ORGANISATION OF THE LESSON IS SUCCESSFUL – *content appropriate for the class – use of appropriate teaching methods – selection of resources clearly related to content and method*								
TEACHING PROCESS SKILLS	BEGINNING THE LESSON – *routine management/gaining attention – motivation skills*								
TEACHING PROCESS SKILLS	CLARITY OF PRESENTATION – *clear explanations and directions – logical structure to lesson – recapitulation*								
TEACHING PROCESS SKILLS	PACING OF PRESENTATION – *varying sight/sound/movement stimuli – responsive to student feedback*								
TEACHING PROCESS SKILLS	DISCUSSION SKILLS – *can arouse, sustain and control relevant discussion – involves pupils – stimulates cognitive development*								
TEACHING PROCESS SKILLS	QUESTIONING SKILLS – *questions pupils appropriately – uses higher order questions – distributes questions*								
TEACHING PROCESS SKILLS	EFFECTIVE USE OF VERBAL COMMUNICATION – *audible/heard with precision/clarity – uses a varied vocabulary*								
TEACHING PROCESS SKILLS	USE OF APPROPRIATE MEDIA – *chalkboard work – skilled use of appropriate instructional media – a range of media is used*								
TEACHING PROCESS SKILLS	SUCCESSFUL CLASS MANAGEMENT – *efficient supervision and control routines – positive approach to discipline problems – exercises leadership*								
TEACHING PROCESS SKILLS (continued)	EVALUATION – *use of formal and informal procedures to diagnose difficulties and achieve objectives*								
TEACHING PROCESS SKILLS (continued)	ENDING THE LESSON – *satisfactory closure – efficient routine management – clarifies the lesson*								
TEACHER/PUPIL RELATIONSHIPS	ENCOURAGES PUPIL PARTICIPATION – *uses group activities – varies interaction patterns*								
TEACHER/PUPIL RELATIONSHIPS	CATERS FOR INDIVIDUAL DIFFERENCES – *ample use of individual differences and dilemmas – stimulates pupil initiative and interaction*								
TEACHER/PUPIL RELATIONSHIPS	USES POSITIVE REINFORCEMENT – *balances censure and praise*								
TEACHER/PUPIL RELATIONSHIPS	RAPPORT – *evidence of warmth and approachability – responsive to student feedback*								
PROFESSIONAL RELATIONSHIPS	ADOPTS PROFESSIONAL ROLE – *acts as a member of school staff – shows a mature attitude to responsibilities – communicates with colleagues effectively and dress is appropriate*								
PERSONAL	CLASSROOM MANNER – *Confident – Self-controlled – exhibits leadership qualities*								
PERSONAL	FLEXIBILITY – *ability to adapt to unforseen circumstances – takes advantage of emerging teaching opportunities*								
PERSONAL	RESPONSIVE AND SELF-CRITICAL – *responses to advice – is able to identify strengths and weaknesses in teaching – undertakes self-evaluation*								
SUBJECT AREAS (please specify)	KNOWLEDGE OF SUBJECT MATTER and general background knowledge is satisfactory.								
STUDENT'S SELF EVALUATION									
PRINCIPAL'S OR SUPERVISOR'S COMMENT – MAJOR STRENGTHS AND WEAKNESSES									

OUTSTANDING | VERY GOOD | GOOD | ADEQUATE | NEEDS ATTENTION | POOR

Please indicate your assessment of the student's overall performance by placing a cross at the appropriate place on the line.

DIAGNOSTIC TEACHING REPORT

The Criteria of Effective Student Teaching were used in the design of a new Diagnostic Teaching Report (Fig 3) which has been in use at Burwood State College for several years. The criteria provide a common language and framework for analysing and reporting on student teaching practice. There are now over 10,000 reports in the new format. The analysis of this rich source of job information has already commenced.

DEVELOPMENT OF THE INVENTORY OF TEACHING TASKS

The Inventory of Teaching Tasks was developed to provide a more detailed description of the tasks performed by beginning teachers, and expected of student teachers. The main reason for seeking to create the job description was the need for an instrument for evaluating the teacher training programme.

Job Analysis Of Teaching

The nineteen Criteria of Effective Student Teaching provided the framework for the analysis of teaching. A list of teaching tasks was compiled. These tasks were identified in the literature on teaching practice, interviews with teachers, and from responses received in the pilot form of the Inventory. The tasks were originally arranged under all nineteen criteria. When the task analysis was completed, it was found that the same tasks could be listed under more than one criterion. Several teachers were asked to review the list of tasks to assist in removing these duplications. Eventually it was found that the final list of 136 tasks could be subsumed under 13 criteria. An extract of the Job Inventory printout is shown in Figure 4.

FIGURE 4 JOBINV - INVENTORY OF TEACHING TASKS

JOB INVENTORY (DUTY/TASK TITLES) AUSTRALIAN DEPARTMENT OF DEFENCE · JOB INVENTORY

Preparation and Planning

1 communicate reasons for objectives to pupils
2 help pupils tutor their peers
3 discriminate between relevant and irrelevant teaching
4 write observable and measurable objectives
5 propose pupil activities related to stated objectives
6 provide variety in activities and topics
7 provide opportunities for pupil self-direction
8 plan to make transitions smoothly
9 write required pupil entry standards
10 prepare equipment or illustrations to avoid delay
11 select appropriate teaching methods and learning activities
12 select appropriate materials and equipment for pupils
13 estimate the completion time of learning task
14 specify relationships between different subjects in integrated approaches
15 develop plans for varied paths to learning for individual pupils
16 develop a plan for pupil diagnosis and assessment
17 picture school work as enjoyable
18 encourage pupil co-operation in group work
19 formulate a set of procedures to help children to teach themselves
20 provide for pupil choice in managing their learning
21 propose an effective introduction to the teaching sequence
22 plan group learning for pupils
23 interpret learning with written performance standards
24 plan to interrelate pupil learning in several subject areas
25 formulate means for concluding teaching sequence
26 state long term program with degree of emphasis on goals and subjects
27 translate broad social aims into school goals
28 discriminate between relevant and irrelevant content
29 identify for the pupil information or skills to be learned
30 identify learning objectives about knowing, being or doing
38 avoid praise with unconvincing stock phrases
39 admit mistakes
40 avoid making promises that cannot be kept
41 avoid talking down to pupils
42 take seriously complex or touchy issues raised by children
43 believe what he is saying in class
44 let children act independently when possible
45 evoke pupil participation
46 be aware of the varied causes of pupil behaviour

Control

47 spend time primarily on teaching and learning activities
48 handle transitions without disruption
49 use management rules and rituals pleasantly and efficiently
50 avoid control techniques which foster undesirable unintended learning
51 avoid practices which foster poor group climates
52 insist successfully on respect for others
53 forbid ridicule
54 praise desirable social behaviour
55 avoid giving preferential treatment
56 avoid delays by using efficient procedures
57 avoid regimentation in management procedures
58 handle transition routines efficiently

Warmth

59 minimize criticisms of individual pupils
60 identify the causes of poor pupil progress
61 be accessible to pupils throughout the day
62 talk to pupils, not at them
63 explain pupils' successes to them in positive terms
64 explain pupils' failures in a supportive manner

Flexibility

Time Spent, Criticality and Complexity

The respondents were asked to rate each task on relative time spent, criticality or the consequences of inadequate performance of the task, and the complexity of the skills needed to perform the task. The complete job inventory is displayed and discussed in 'An Occupational Analysis of Teaching' (Burns 1978).

JOB DESCRIPTIONS OF TEACHING FROM INVENTORY OF TEACHING TASKS' DATA

Analysis Of Time Spent Data

Respondents rated each teaching task on the time spent rating scale, from 1 (very small amount of time) to 5 (extremely large amount of time). All the ratings made by a respondent were totalled. This total was assumed to equal 100% of the work time of a beginning teacher. The rating for each task was now converted to a percentage of the total work time. The ratings for all correspondents were caculated in the same way.

Job Description Of Teaching At The Duty (Criterion) Level

The CODAP program JOBSPC (Job Special) was used to create a job description of the work of beginning teachers. The duty job description printout showing 13 criteria (duties) ranked in relative per cent time spent order, is shown in Figure 5.

FIGURE 5

JOB DESCRIPTION OF BEGINNING TEACHERS AT THE DUTY LEVEL

Job Descriptions - Study C044BITT - Burwood State College

DUTY JOB DESCRIPTION CASES TASKS DUTIES MBRS

Cumulative sum of average percent time spent by all members .....
Average percent time spent by all members .....
Average percent time spent by members performing .....
Percent of members performing .....

D-TSK	DUTY/TASK TITLE				
A	Preparation and Planning	100.00	21.86	21.86	21.86
B	Rapport	98.53	12.12	11.94	33.80
I	Questioning Skills	98.53	10.09	9.94	43.74
H	Pupil Activity	99.26	8.72	8.66	52.40
C	Control	100.00	8.63	8.63	61.03
G	Motivation	100.00	7.42	7.42	68.46
M	Discussion	97.79	6.56	6.42	74.87
E	Flexibility	100.00	5.75	5.75	80.62
D	Warmth	100.00	4.93	4.93	85.55
L	Effective Pupil Learning	96.32	4.36	4.20	89.75
K	Clinching	98.53	3.64	3.59	93.34
F	Responsive and Self Critical	99.26	3.45	3.42	96.76
J	Knowledgeable	98.53	3.23	3.18	99.94

Significance Of The Duty Job Description

The information in the job description yields valuable information for a designer or evaluator of a course for pre-service teachers. 21.86% time is spent on Preparation and Planning; 11.94% on tasks involved in developing Rapport with pupils; 9.94% on Questioning Tasks; 8.66% on promoting Pupil Activity and 8.63% on Control. These five criteria take up nearly two-thirds (61.03%) of the time spent by beginning teachers.

Additional Duty Job Descriptions were created from the responses of the three sub-groups of respondents, supervising teachers, student teachers and college staff. The three groups ranked the thirteen tasks almost identically (Spearman rho rank order correlation 0.98 and 0.97). These very high correlations support Christal's statement that supervisors show a high level of agreement on their descriptions of the jobs of their 'subordinates'. All three groups had the same criteria in the top five, and they each rated the time spent on them at 60%.

The rankings are shown in Figure 6.

FIGURE 6

CRITERIA OF EFFECTIVE STUDENT TEACHING (DUTIES) IN RANK ORDER ACCORDING TO RATINGS OF TIME SPENT

Criteria (Duties)		GROUPS			
Identification	Title	Total Popul.	Superv. Teachers	Student Teachers	Coll. Staff
A	Preparation and Planning	1	1	1	1
B	Rapport	2	2	2	3
I	Questioning Skills	3	3	3	2
H	Pupil Activity	4	4	5	4
C	Control	5	5	4	5
G	Motivation	6	6	6	6
M	Discussion	7	7	7	7
E	Flexibility	8	8	8	8
D	Warmth	9	9	9	9
L	Effective Pupil Learning	10	10	10	10
K	Clinching	11	11	12	11
F	Responsive and Self Critical	12	12	11	13
J	Knowledgeable	13	13	13	12

The Spearman Rank-Order Correlations were calculated and the results are shown in Figure 7.

FIGURE 7

SPEARMAN RANK-ORDER CORRELATIONS FOR THE RANKING OF 13 CRITERIA OF EFFECTIVE TEACHING BY FOUR GROUPS

Groups	Total Population	Supervising Teachers	Student Teachers	College Staff
All Respondents	----			
Supervising Teachers	1.00	----		
Student Teachers	0.98	0.98	----	
College Staff	0.98	0/98	0.97	----

ρ = <.01

Job Description Of Teaching At The Task Level

The JOBSPC program produced a job description at the task level. The value of the task job description is that it reduces ambiguity by increasing precision. The task job description lists all 136 teaching tasks, while the Duty job description only lists 13 duties (criteria). An extract from the task job description is shown in Figure 8.

FIGURE 8

JOBSPC - TASK JOB DESCRIPTION

Total Population
Job Descriptions - Study CD44BITT - Burwood State College

Task Job Description	Cases	Tasks	Duties	MEPS
	137	136	13	13c

D-TSK	DUTY/TASK TITLE	Cumulative sum of average percent time spent by all members.....	Average percent time spent by all members	Average percent time spent by members performing.	Percent of members performing.....	Task Seq. No.
B 45	Evoke pupil participation	97.26	1.03	1.00	1.00	
D 60	Identify the causes of poor pupil progress	100.00	.99	.99	1.99	
A 5	Propose pupil activities related to stated objectives	99.26	.98	.97	2.96	
E 72	Diagnose and provide for learning difficulties	100.00	.94	.94	3.91	
H 88	Design activities for pupils' needs & interests	95.59	.98	.94	4.84	5
C 47	Spend time primarily on teaching and learning activities	94.85	.98	.93	5.78	
G 78	Arouse the pupils' interest in their work	98.33	.94	.93	6.70	
G 79	Provide activities in a variety of formats	97.79	.94	.92	7.62	
B 46	Be aware of the varied causes of pupil behaviour	95.59	.95	.91	8.53	
G 80	Give interesting lessons	96.32	.94	.91	9.44	10
A 11	Select appropriate teaching methods and learning activities	98.53	.92	.91	10.35	
A 8	Plan to make transitions smoothly	98.53	.91	.90	11.25	
B 44	Let children act independently	95.59	.94	.90	12.14	
A 11	Prepare equipment or illustrations to avoid delay	98.53	.90	.89	13.04	
F 65	Use grouping effectively to individualize instruction	98.53	.92	.89	13.93	15
B 36	Conduct informal contacts with pupils in an open manner	97.16	.92	.89	14.81	
D 62	Talk to pupils, not at them	95.59	.91	.87	15.69	
H 93	Design activities which the children und'stand	94.85	.92	.87	16.56	
G 35	Vary presentation with questions & voice inflection	98.53	.88	.87	17.42	
M 37	Provide thinking & problem solving activities	97.06	.89	.86	18.29	20
B 36	Model politeness & respect for other pupils	95.50	.89	.85	19.14	
H 95	Encourage children to work co-operatively	97.79	.87	.85	19.99	
C 52	Insist successfully on respect for others	97.66	.88	.85	20.85	
G 81	Arouse pupil curiosity	96.32	.88	.85	21.70	
A 19	Formulate a set of procedures to help children to teach themselves	97.16	.87	.84	22.54	25
D 63	Explain pupils' successes to them in positive terms	97.36	.86	.83	23.37	
D 64	Explain pupils' failures in a supportive manner	97.06	.86	.83	24.20	
A 13	Encourage pupil co-operation in group work	100.00	.83	.83	25.03	

It can be seen that 22 teaching tasks take 20% of the average per cent time spent. These 22 tasks are subsumed under the seven teaching duties listed in Figure 9. (next page)

Grouping Similar Sets of Time Spent Responses

The sets of teaching tasks listed under each criterion illustrate the way in which task inventories increase precision in job description by identifying the percentage of members performing the tasks and the per cent time spent on each task. One way of using the precision of a task job description is to select the top group of tasks. The top group may be defined as those tasks taking up a specified percentage of time spent. For example, the 22 tasks taking up the top 22 per cent of the beginning teacher's work time have been listed. If this inventory had been administered to a group of primary teachers, from junior teacher to principals, accurage and useful opportunities for comparison of the work of teachers at different levels would be provided. This point may be illustrated by a reference to another occupational analysis of teaching. The writer administered a different job inventory to a range of primary teachers. The task job descriptions show, in detail, the differences in the range of tasks performed by different groups of primary teachers. One of the most striking differences is that vice-principals have an extensive and specific involvement in the reading programs of their schools, while the principals have a more limited and general involvement in these programs. While this finding is not unexpected, the task job description enables the reader to translate this general finding into a detailed

FIGURE 9

DUTIES AND TEACHING TASKS IN TOP 20% OF AVERAGE PERCENT TIME SPENT

Duty	No. of Tasks	Teaching Task Numbers	Sum of Average Percent Time Spent
B - Rapport	5	45, 46, 44, 36, 34	4.55
A - Preparation & Planning	4	5, 11, 8, 10	3.67
H - Pupil Activity	4	88, 93, 87, 95	3.53
G - Motivation	4	78, 79, 80, 85	3.63
D - Warmth	2	60, 62	1.86
E - Flexibility	2	72, 65	1.83
C - Control	1	47	.93
	22		19.99

form. The differences are substantial enough to suggest that an in-service unit for developing, teaching and monitoring a reading program would be more attractive to vice-principals than principals. An extract from the Group Differences printout is shown in Figure 10.

FIGURE 10 GROUP DIFFERENCES IN TIME SPENT

Group differences - Study Co44BITT- Burwood State College
Prn Members = 27 School Principal
V-Prn Members = 49 School Vice Principal

Average percent time by all group members ---Difference, PRN Minus V-Prn .....
V-Prn Average percent time by all group members.....
Prn Average percent time by all group members.....
Percent members performing ---Difference, Prn Minus V-Prn....
V-Prn percent members performing.....
Prn percent members performing.....

D-Tsk	TASK TITLE						
B 58	Make recommendations for school-wide grouping plans	74.07	46.94	27.14	1.62	.58	1.04
A 29	Specify the implications of a course plan for the school curriculum as a whole	92.59	69.39	23.20	2.69	1.03	1.66
B 71	Ask teachers to give their opinion of the reading p'gram	81.48	59.18	22.30	1.54	.67	.88
A 11	State the general aims of the school	100.00	79.59	20.41	3.49	1.21	2.28
A 49	Identify the differences in opinion between teachers, parents and pupils on various course objectives	81.48	61.22	20.26	1.79	.71	.108
B 75	Seek the assistance of a reading consultant	77.78	59.18	18.59	1.53	.78	.74
A 23	Make judgements about the moral implications of planning processes	77.78	65.31	12.47	1.32	.74	.58
B 72	Ask parents to give their opinion of the reading program	48.15	40.82	7.33	.69	.31	.37
A 24	State assumptions about how children learn	88.89	81.63	7.26	1.53	1.33	.20
A 47	Give parents accurate, diagnostic reports on their c'dren performances	77.78	71.43	6.35	1.43	.88	.55
B 55	Take part in a co-ordinating c'tee for the development of the school's reading program	77.78	71.43	6.35	1.88	1.10	.78
A 18	Identify the interests & skills of staff in the school	100.00	93.80	6.12	3.33	1.84	1.49
B 76	Make recommendations for using the existing reading material in the school	74.07	69.39	4.69	1.53	.93	.60
A 28	Identify the ways in which pupils receive & modify courses	62.96	59.18	3.78	1.01	.72	.29
A 30	Identify some of the barriers to change in sch. courses	85.19	81.63	3.55	2.14	1.29	.85
A 6	Select books which assist teachers to teach	88.89	85.71	3.17	2.35	1.22	1.13
A 19	Identify the resources available in the school to make the plan work	100.00	97.96	2.04	3.05	2.14	.91
A 44	Decide whether the selection & sequences of course content is sound	81.48	79.59	1.89	1.85	1.21	.64
A 48	Devise progress scales for each of the major objectives of the course	48.15	46.94	1.21	.69	.55	.15
B 65	List the work-recognition, comprehension and study skills which the pupils need to acquire	55.56	55.10	.45	.88	.72	.16

Grouping Similar Sets Of Time Spent Responses

The CODAP program OVRLAP is used to measure the degree of overlap in the descriptions of a specified job by the respondents. In this study it was used to measure the similarity in the sets of time spent ratings made by the three groups of respondents; namely supervising teachers, college supervisors and student teachers.

The CODAP program DIAGRM is used to present graphically the results of the grouping process. This printout shows a 'tree-like' diagram which displays the order in which groups merged during the grouping process. If the group being surveyed is heterogeneous then the 'tree' will show many 'branches'. That is, it will show that there are many different job-types within the occupational group in the survey. Conversely, if the group being surveyed is homogeneous, there will be few, if any, 'branches' on the 'trunk'. A simple illustration of the shape of DIAGRM outputs for homogeneous and heterogeneous groups is shown in Figure 11.

FIGURE 11

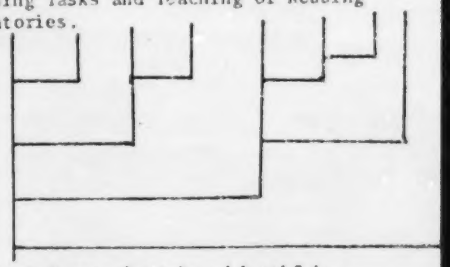
COMPARISON OF THE SHAPES OF HOMOGENEOUS AND HETEROGENEOUS DIAGRM PRINTOUTS

The 'Shape' of the DIAGRM output based on Inventory of Teaching Tasks data on the Time Spent Factor.

Trunk with one small unimportant branch of 9 members.

A graphical representation of a HOMOGENEOUS JOB DESCRIPTION of Beginning Primary Teachers.

The 'Shape' of the DIAGRM output based on the data from the Inventory of Planning Tasks and Teaching of Reading Inventories.



Trunk with many branches identifying significant job groups.

A graphical representation of a HETEROGENEOUS JOB DESCRIPTION of Primary Teachers with different responsibilities and experience.

Therefore the DIAGRM program was run in the expectation that the printout from the Inventory of Teaching Tasks would show a picture of a homogeneous group. The printout showed a 'tree' with a branch so minor, it is a mere twig. The supervisors and student teachers have described a homogeneous group. Christal has already been quoted as observing that the U.S. Air Force experience shows that the job descriptions made by job incumbents and their supervisors always show a very high level of agreement.

TASK FACTORS - CRITICALITY AND COMPLEXITY

Analysis of 'Criticality' and 'Complexity' Responses

The CODAP program REXALL was used to analyse the two Task Factors, Criticality and Complexity. The printout showed an inter-rater reliability co-efficient of 0.97 for Criticality and 0.98 for Complexity. REXALL was also used to eliminate the error variance in the computation of the inter-rater agreement co-efficient by standardising the ratings on a mean of 5.0 and a S.D. of 1.0.

The program FACSPC printed the mean rating of each task on the selected factor. The list of ten teaching tasks in Figure 12 is extracted from two FACSPC printouts. The tasks are arranged in descending order, according to their mean criticality ratings.

FIGURE 12

A COMPARISON OF THE RATINGS AND RANKINGS OF TEN TASKS RATED 'VERY CRITICAL' (MEAN > 4.0) WITH THEIR COMPLEXITY RATINGS AND RANKINGS

		COMPLEXITY RATINGS						
		Percent of the Distance from Minimum to Maximum						Complexity Seq. No.
		Raw Mean Ratings Using all Non-Zero Values						
		Standardised Mean Rating: Mean = 5.0, SD = 1.0						
		CRITICALITY RATINGS		Criticality Seq. No.				
		Raw Mean Rating Using All Non-Zero Values						
		Standardised Mean Rating						
D-TSK	TASK TITLE							
D 60	Identify the causes of poor pupil progress	7.24	4.31	1	7.72	4.27	94.00	2
L 123	Change procedures when pupils do not learn	6.94	4.19	2	5.58	3.37	60.02	44
E 72	Diagnose and provide for learning difficulties	6.91	4.18	3	7.57	4.43	100.00	1
B 45	Evoke pupil participation	6.72	4.11	4	5.76	5.76	63.33	37
H 93	Design activities which pupils understand	6.68	4.10	5	5.79	3.48	64.30	32
L 122	Realise when he is losing pupil attention	6.64	4.08	6	4.14	2.61	31.12	107
B 40	Avoid making promises that cannot be kept	6.58	4.06	7	3.11	3.11	10.57	130
C 52	Insist successfully on respect for others	6.58	4.06	8	5.24	3.19	53.22	60
B 46	Be aware of the varied causes of pupil behaviour	6.50	4.03	9	6.71	3.97	82.64	3
G 78	Arouse the pupils' interest in their work	6.48	4.02	10	5.99	3.99	68.32	26

Very Critical Teaching Tasks

Tasks given a very critical rating, range from Task E 72 which is rated the most complex of all 136 tasks, to Task B 40 which is 130th in complexity, i.e. one of the simplest of the tasks.

Column 3 shows the Criticality rankings 1 to 10 and Column 7 shows the complexity rankings from 1 to 130. Task D 60 'Identify the cause of poor pupil progress' is number 1 in criticality rating and number 2 in complexity rating. Task B 40, 'Avoid making promises that he is unable to keep', is rated number 7 on criticality and 130 on complexity. A difference in rankings of 123 places is very sizable indeed in a range from 1 to 136. These substantial differences emphasise the value of incorporating the factor 'criticality' for identifying tasks which may be simple but very significant in their consequences.

Most Complex Teaching Tasks

The three most complex teaching tasks are F 72 'Diagnose and provide for learning difficulties', D 60 'Identify the causes of poor pupil progress', B 46 'Be aware of the varied causes of pupil behaviour'. Each of these tasks equates to a whole unit in a training course. Task F 72 is practically the title of a third year unit in Burwood's Diploma of Teaching. A semester unit is presented to Diploma of Education students which addresses itself to task B 46, 'Be aware of the causes of pupil behaviour'.

DEVELOPMENT AND APPLICATION OF THE TRAINING PRIORITY INDEX

Assumptions Underlying The Training Priority Index

The analysis of data indicated those teaching tasks which are most time consuming, critical or complex. The problem was to develop a formula for combining these ratings to create a Training Priority Index, in order to identify those tasks which should receive high priority in the training program. The assumptions which underlie the development of the index include :

1. The training priority of each task will be affected by more than one factor.
2. Decisions affecting training priority need to take into account the inter-related influences of several factors on each task.
3. Simple tasks should precede complex tasks in the training program.
4. Complex tasks cannot be left simply to the end of the training program since they need time for effective mastery. This problem may be partly resolved, if it can be shown that complex tasks subsume simpler teaching tasks.
5. Tasks which were rated very critical should be taught and practised earlier than tasks which were rated not very critical.
6. Tasks which were rated very time consuming for beginning teachers should take up a greater proportion of the time spent in the training program and therefore receive a higher priority than those tasks which received a very low time spent rating.

The following examples are listed to illustrate the inter-relatedness of the above assumptions. Teaching Task A 10 'Prepare equipment or illustrations ahead of time to avoid delay' received a high time spent rating (3.547) and a very critical rating (3.623), but was rated a simple teaching task (2.382). On the other hand teaching Task A 9 'Write required pupil entry standards' received a low time spent rating (1.959), only a moderately critical rating (2.703), but was rated quite complex (3.280). It will be shown later in the paper, that out of a group of thirty preparation and planning tasks, A 10 was given first priority, but A 9 was rated last in the group. At this stage, it is argued that the six assumptions listed above may be used to develop a formula which takes criticality, complexity and time spent into account when assigning a training priority rating to each task. On these assumptions, the following formula was developed :

TIME SPENT (MEAN + CRITICALITY (MEAN - COMPLEXITY (MEAN) = Training Priority Index. That is, the mean ratings for the time spent and criticality factors were added and the mean complexity rating was subtracted from that total. This meant that tasks which were time consuming and very critical but simple, were to be taught early in the training program. In contrast, tasks which took up little of the beginning teacher's time were not critical but were very complex, were left to the end of the training program, and could even be omitted, if training time was limited.

Application Of The Training Priority Index To Duty A - Preparation & Planning

The Training Priority Index formula was applied to the thirty teaching tasks listed under Duty A - Preparation & Planning. This Duty was selected as it was consistently rated most time consuming of the 13 duties by all groups. No group allotted it less than 20% of time spent. After making the calculations the teaching tasks were arranged in Training Priority Index order from the highest to the lowest scores. An extract from the list of the tasks in Training Priority Index order is shown in Figure 12.

FIGURE 13

PREPARATION AND PLANNING TASKS IN TRAINING PRIORITY ORDER

Responsibility A - PREPARATION AND PLANNING

TI No.	T.T. Description	Time Spent Mean ($\bar{X}1$)	Criticality Mean ($\bar{X}2$)	Time/Criticality Index ($\bar{X}1$ plus X2)	Complexity Mean ($\bar{X}3$)	Training Priority Index for Teaching Tasks ($\bar{X}1$ plus $\bar{X}2$ minus $\bar{X}3$)	Ranking by Training Priority Index for Teaching Tasks (T.P.I.T.T.)
10	Prepare equipment or illustrations to avoid delay	3.547	3.623	7.170	2.382	4.788	1
8	Plan to make transitions smoothly	3.489	3.721	7.210	3.038	4.172	2
5	Propose pupil activities related to objectives	3.791	3.941	7.732	3.662	4.070	3
17	Picture school work as enjoyable	2.964	3.874	6.838	2.779	4.059	4
12	Select appropriate materials and equipment for pupils	3.201	3.489	6.690	2.784	3.906	5
11	Select appropriate teaching methods and learning activities	3.532	3.761	7.293	3.485	3.808	6
18	Encourage pupil co-operation in group work	3.295	3.547	6.842	3.277	3.565	7
21	Propose an effective introduction to the teaching sequence	3.108	3.603	6.711	3.289	3.422	8.5
19	Formulate a set of procedures to help children to teach themselves	3.309	3.770	7.079	3.657	3.422	8.5
23	Interpret learning with written performance standards	2.693	3.046	6.744	3.492	3.252	10
3	Discriminate between relevant and irrelevant teaching	2.928	3.664	6.592	3.469	3.123	11
28	Discriminate between relevant and irrelevant content	2.734	3.664	6.398	3.328	3.070	12
29	Identify for the pupil information or skills to be learned	2.763	3.227	5.990	2.953	3.037	13
6	Provide variety in activities and topics	3.129	3.170	6.299	3.285	3.014	14
7	Provide opportunities for pupil self-direction	3.173	3.372	6.545	3.583	2.962	15
25	Formulate means for concluding a teaching sequence	2.655	3.097	5.762	2.848	2.904	16

Implications of the Training Priority Index

One of the purposes of this project was to provide objective data for the selection and structuring of courses supporting the teaching practice program. The Preparation & Planning Tasks were arranged in Training Priority Index sequence and examined to see if the sequence could be used in the design of Curriculum Planning units in the College. The central inference drawn from the examination of the sequence of planning tasks created with the Training Priority Index was that beginning teachers develop their planning skills by selecting, analysing and adapting existing curriculum materials, rather than by creating original plans. The concept of starting the planning process with the selection and use of existing materials is illustrated in the sequence of 'Teaching tasks associated with objectives' shown in Figure 13.

FIGURE 14 TEACHING TASKS ASSOCIATED WITH OBJECTIVES

T.T. No.	Teaching Task Description	Ranked By Training Priority Index
5	Propose pupil activities related to objectives	3
29	Identify for the pupil information or skills to be learned	12
27	Translate broad social aims into school goals	17
1	Communicate reasons for objectives to pupils	23
30	Identify cognitive, affective and psychomotor objectives	24
4	Write observable and measurable objectives	25
9	Write required pupil entry standards	30

The implication of this sequence is that beginning teachers use objectives created by others, and may only write objectives at a later stage. The range of teaching tasks related to objectives in ascending order of difficulty could be summarised as, select, analyse, use, adapt and write objectives. These verbs summarise an increasingly difficult sequence.

The new sequence of teaching tasks was used to make two changes in units on Curriculum Planning in the teacher training programme. First, the topics in the units were rearranged to match the teaching task sequence. Second, new teaching materials were designed to match the teaching tasks.

SUMMARY

This paper reviewed the application of occupational analysis techniques to the evaluation of student teaching practice and the teaching practice programme. An analysis of teaching reports provided a set of Criteria of Effective Student Teaching which were incorporated in a Diagnostic Teaching Report Form to provide a structure for the evaluation of student teaching practice.

Time spent ratings of the tasks in an Inventory of Teaching Tasks were used to create an accurate and detailed duty and task description of the work of beginning teachers. The teaching tasks were rated according to their criticality and complexity. The three ratings, time spent, criticality and complexity, were combined to create a training priority index. The training priority ratings were used to arrange the teaching tasks in an optimum training sequence. This sequence was used to evaluate and design the teaching practice programme.

Note

This paper is based on a research project entitled 'An Occupational Analysis of Teaching - I The Work of Beginning Teachers'. The project was supported by a grant from the Education Research and Development Committee.

References

Burns, David (1978) An Occupational Analysis of Teaching I - The Work of Beginning Teachers, Report prepared for the Educational Research and Development Committee, Canberra.

Christal, Ray E (1974) The United States Air Force Occupational Research Project. Air Force Human Resources Laboratory, Occupational Research Division, Lackland Air Force Base, Texas.

Thomson, David C (1979) Comprehensive Occupational Data Analysis Programs (CODAP), Proceedings of the Occupational Analysis Seminar: 17-20 September, Barton, A.C.T. (In Press)